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Agenda Item 7c

March 15, 2011

TO: MEMBERS OF THE BENEFITS AND PROGRAM ADMINISTRATION COMMITTEE

I. SUBJECT: Actuarial Assumption Model for Other Post Employment Benefits - Revision to Existing Model

II. PROGRAM: Actuarial & Employer Services and the California Employers' Retiree Benefit Trust (CERBT)

III. RECOMMENDATION:

Staff recommends that, if the Committee recommends to the Board the adoption of three asset allocation strategies for the CERBT, the Committee also recommend the Board adopt revisions to the CalPERS Other Post Employment Benefits (OPEB) Assumption Model to reflect the establishment of three asset allocation strategies for the CERBT and their respective discount rate assumption. The new model will be effective for OPEB cost reports (actuarial valuations and Alternative Measurement Method reports) dated after June 15, 2011. A copy of the revised assumption model is included as Attachment 1.

IV. ANALYSIS:

Under Governmental Accounting Statements 43, 45, and 57, actuarial valuations (which include Alternative Measurement Method cost reports) are performed biennially to determine plan liabilities and the contribution rates necessary to adequately fund them. To perform actuarial valuations, actuaries use various demographic and economic assumptions to set a contribution schedule of employee and employer contributions designed to accumulate with interest to equal the total present value of benefits by the time every member has left employment.

The primary economic assumption is the discount rate assumption. The current CERBT discount rate assumption is 7.75% as set forth in the CalPERS OPEB assumption model.

CalPERS OPEB Assumption Model

In November 2006, the CalPERS Board adopted the CalPERS OPEB Assumption Model. The CalPERS OPEB Assumption Model is used in OPEB actuarial valuations by employers who choose to pre-fund their OPEB obligations through the CERBT.

The assumption model was prepared by CalPERS staff actuaries but reflected the consensus of representatives of five different actuarial consulting firms.

Since the adoption of the model, other outside consulting actuaries have been using the model to perform OPEB actuarial valuations for employers wishing to invest in the CERBT. The model is used in OPEB actuarial valuations by employers that elect to pre-fund their OPEB obligation through the California Employers' Retiree Benefit Trust (CERBT) Fund.

This Committee will be considering the establishment of three asset allocation strategies for the CERBT in a separate agenda item in March 2011. The current OPEB assumption model requires all employers that fully pre-fund their OPEB benefits to use 7.75% as the discount rate assumption. The creation of three separate asset allocation strategies will require an amendment to the OPEB assumption model.

The three new CERBT Asset Allocation Strategies being considered in March, 2011 are shown in table 1 below.

Table 1: ASSET ALLOCATION POLICY MIX

ASSET CLASSIFICATION	ASSET ALLOCATION 1	ASSET ALLOCATION 2	ASSET ALLOCATION 3
Global Equity	**66.0%**	**50.1%**	**31.6%**
U.S. Nominal Bonds	**18.0%**	**23.9%**	**42.4%**
Global Real Estate	**8.0%**	**8.0%**	**8.0%**
Inflation Linked Bonds	**5.0%**	**15.0%**	**15.0%**
Commodities	**3.0%**	**3.0%**	**3.0%**
	100.0%	**100.0%**	**100.0%**

There is a direct relationship between the asset allocation adopted by the Board and the discount rate assumption. Consequently, a review of the discount rate assumption is necessary. This review is also necessary to ensure the assumption reflects both short term and long term expected investment returns for the various asset classifications and for the portfolio as a whole.

Discussion

In addition to investment management services and compliant plan reporting, the CERBT program also provides a model of OPEB actuarial assumptions that all participating employers use to measure and report their OPEB costs. Employers are not required to make contributions to the CERBT. Rather, contributions are made voluntarily by employers. The voluntary nature of employer OPEB contributions is consistent with current law and with governmental accounting standards.

Since each employer determines the pace at which OPEB benefits are pre-funded, the OPEB assumptions model is designed to allow flexibility for local employer needs. The recommended changes to the OPEB assumption model regarding the discount rate are consistent with the assumption model's flexibility. In particular, the recommendation gives to the local employer the ability to apply a margin for adverse deviation (discussed below) that will match the local employer need.

The approach used in determining an appropriate discount rate assumption for each asset allocation strategy was based on guidance set forth by the Pension Practice Council of American Academy of Actuaries in the Actuarial Standard of Practice, *Selection of Economic Assumptions for Measuring Pension Obligations* (ASOP No. 27), adopted September 2007.

Recognizing that there is not one "right answer", the ASOP calls for the actuary to develop a "*best-estimate range*" for the discount rate assumption, and then recommend a specific point within that range. The practice council recommends the use of the 25^{th} to 75^{th} percentile range unless it is inappropriate.

When estimating the 25^{th} and 75^{th} percentiles, it is important to realize that the time horizon for actuarial valuations usually covers a period of more than 50 years. When a member is hired at age 25, actuaries have to make assumptions about the investment return we can expect from the asset allocation until the last benefit payment for that member is paid, which could be up to 80 years.

Investment returns over the next 10 years are expected to be lower than the historical average, and the expected returns that were presented to the Board reflect that expectation.

The first step in this approach was to derive market return assumptions for each asset classification for years 11 and beyond. The Actuarial Office worked closely with Investment Office staff in developing an approach that could be used to derive these market return assumptions. There was a common agreement that expected return for years 11 and beyond should be higher than returns expected during the next 10 years, but that they should be lower than the historical returns when looking back to the 1920s.

In order to determine an appropriate discount rate assumption for the OPEB assumption model, an approach was developed that takes into account both short and long term expectations, and the expected cash flows of the CERBT fund. For more details please refer to Attachment 2.

Using the approach described in Attachment 2, simulated returns were used together with the three asset allocation strategies to determine the 25th to 75th percentile range of the geometric expected return over a period of 20 years.

An important aspect of determining an acceptable range for a discount rate assumption is expected administrative expenses. The discount rate assumption used in the actuarial valuation is a representation of the expected investment return net of administrative expenses. During the first three years of operation, the administrative expenses of the CERBT have been less than 10 basis points of the assets each year. Staff believes that 15 basis points is a reasonable estimate of the average annual administrative cost in future years.

Even though actuarial standards of practice allow a wide range for the discount rate assumption, it is generally recommended to select an assumption between the 25th and 50th percentile in order for the fund to have more than 50% chance of earning an investment return equal to or higher than the discount rate assumption. Percentiles of the expected investment returns, using a 20 year horizon, both before and after reflecting the 0.15% in expected plan administrative expenses are shown in Table 2 below.

Table 2: Expected Geometric Investment Returns Over the Next 20 Years

Asset Allocation Strategy		**25th Percentile**	**50th Percentile (Median)**	**75th Percentile**
1	Gross Expected Return	5.95%	7.76%	9.58%
1	Administration Expense	0.15%	0.15%	0.15%
1	Net Expected Return	5.80%	7.61%	9.43%
2	Gross Expected Return	5.75%	7.21%	8.67%
2	Administration Expense	0.15%	0.15%	0.15%
2	Net Expected Return	5.60%	7.06%	8.52%
3	Gross Expected Return	5.40%	6.54%	7.62%
3	Administration Expense	0.15%	0.15%	0.15%
3	Net Expected Return	5.25%	6.39%	7.47%

Before making a recommendation on the discount rate assumption for the CERBT, an important part of the decision process is to decide on a margin for adverse deviation. When the Board first established the discount rate for the CERBT in 2007, the margin for adverse deviation was set to 0 basis points.

Balancing the level of risk taken on in the funding of the plan with the impact on employers, stakeholders and the public in general is fundamentally a task of the Board. In a different agenda item, staff has recommended that the Committee recommend that the Board provide CERBT employers with two more asset allocation strategy options, each of which has a lower expected investment return and risk than the initial allocation strategy. These three strategies allow employers to match the level of funding risk to the characteristics of their OPEB plan. For these reasons, we recommend that the Board continue to include no margin for adverse deviation. Rather, staff recommends that each employer be able to apply a margin for adverse deviation consistent with the need of the local requirement. The OPEB assumption model is being revised to allow such flexibility.

No participating employer is required to include a margin for adverse deviation. An employer who elects to add a margin for adverse deviation would experience three consequences:

1. Measured liabilities, present value of future benefits, and annual required contribution (ARC) would increase.
2. Actuarial investment gains would be more likely than actuarial investment losses in any given year.
3. If the employer makes contributions in accordance with the ARC, then OPEB benefit pre-funding would occur sooner.

Since the employer is responsible for ensuring plan funding, if an employer prefers these consequences, then staff sees no reason to limit the flexibility of the employer in this matter.

The recommended discount rate for each asset allocation strategy is shown as the net expected return in the "50th Percentile (Median)" column shown in Table 2 above. The recommendation continues the Board's current approach of applying a no margin for adverse deviation. The recommendation includes providing the local employer with the ability to apply a margin for adverse deviation that matches the local employer need.

Other Changes

We are also recommending a technical change to the OPEB assumption model to ensure the model would not require a revision in the event GASB where to restrict the types of actuarial cost methods allowed in OPEB actuarial valuations. The model is being revised to say that any of the two methods currently allowed can be used if allowed by GASB.

Recommendation

The recommended discount rate for each asset allocation strategy is shown in Table 3 below. The recommendation continues the Board's current approach of applying no margin for adverse deviation. The recommendation includes providing the local employer with the ability to apply a margin for adverse deviation that matches the local employer need.

Table 3: Recommended CERBT Discount Rate and Alternative Option

Asset Allocation Strategy	Strategy 1	Strategy 2	Strategy 3
Gross Expected Return	7.76%	7.21%	6.54%
Administration Expense	0.15%	0.15%	0.15%
Net Expected Return	7.61%	7.06%	6.39%
Recommended Discount Rate*	**7.61%**	**7.06%**	**6.39%**

* Prior to inclusion of margin for adverse deviation, if any.

The recommended changes to the OPEB assumption model will be effective for OPEB cost reports (actuarial valuations and Alternative Measurement Method reports) dated after June 15, 2011. A copy of the revised assumption model is included as Attachment 1.

V. STRATEGIC PLAN:

This item is consistent with the 2010 CalPERS Strategic Plan objectives V and VIII which state:

V - Provide sustainable pension benefit products and services responsive to and valued by members, employers, and stakeholders.

VIII - Manage the risk and volatility of assets and liabilities to ensure sufficient funds are available, first, to pay benefits and second, to minimize and stabilize contributions.

VI. RESULTS/COSTS:

See above.

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Attachments